Little James

THE

TIMBER SUPPLY QUESTION,

OF THE

DOMINION OF CANADA

AND THE

UNITED STATES OF AMERICA.

BY

JAMES LITTLE.

SECOND EDITION WITH ADDITIONS.

Montreal:
LOVELL PRINTING AND PUBLISHING COMPANY.
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TO THE PUBLIC.

WHEN, a few years ago, it was rumored that the coal fields of Great Britain would not supply the then rate of consumption for more than two or three generations, a general alarm at the prospect of so terrible a calamity, so soon to fall on the nation, immediately manifested itself. It became the question of the day, the Press was full of it, had daily leaders on it, and it was made a subject of Parliamentary inquiry, and, until it was satisfactorily ascertained, by scientific investigations and surveys, that there was coal enough in the country for many centuries, the question was the one absorbing topic of conversation and discussion amongst all classes in the British Isles.

The question of the timber supply here is of as much importance to us and the people of the neighboring States as that of the coal supply, which so powerfully exercised the minds of the people of Britain, could possibly be to them. Besides the amount of the raw material for our home consumption, which fully equals in value that of the exported, the returns for the last five years show for

1870–1	$22,352,211
1871–2	23,685,382
1872–3	28,586,816
1873–4	26,827,715
1874–5	24,781,780

making a total of $126,233,904, and averaging $25,246,781, which is largely in excess of the amount received for our cereals in the same time, the export of lumber in 1875 amounting to

$24,781,780 while that of the field was but $17,246,000—and besides the Provinces of Ontario and Quebec have in addition been yearly in receipt of over half a million of dollars each, raised from dues on timber, ground rent, &c., which enable them to give large assistance to the railway projects of the country; and notwithstanding I showed beyond dispute over two years ago that we will not, at the rate of consumption going on, have a foot left this side of the Rocky Mountains of the commercial woods which now yield us the above sums, and supply our home consumption, for the short period of a dozen of years, at the outside, hardly a thought has been given to the subject by those whose business it is to see that this source of wealth to the country is carefully protected from spoliation and waste. On the contrary, the Governments of both Ontario and Quebec, through their Crown Timber offices, which are generally placed under the management of Lawyers, coming in one after another, and totally ignorant of the duties they are appointed to administer, have been doing all in their power to hasten the stripping of the country of its invaluable timber resources, which never can be reproduced, so far as the white pine is concerned—the most valuable wood that grows—by throwing them on the market, year after year, without any reference whatever to the requirements of the trade,—their sole object appearing to be to see which of them could raise the largest amount of revenue, and make the best exhibit in their budget speeches, out of our yearly decreasing supply no matter at what sacrifice of it, or injury to the country; and this reprehensible course has been the means of stimulating production to such an extent that the greatest and most shameful waste of this indispensable material has become the order of the day, while our Boards of Trade, our political economists and statesmen, and the leading Journals of the country, totally ignore the subject as not worthy of their slightest notice. THE QUESTION THUS TREATED WITH SO MUCH INDIFFERENCE AND NEGLECT WILL, HOWEVER, IT IS CERTAIN, BEFORE MANY YEARS ROLL ROUND, FORCE ITSELF ON THE

ATTENTION OF THE WHOLE COMMUNITY TO SUCH A DEGREE AS TO DWINDLE ALL OTHER QUESTIONS INTO UTTER INSIGNIFICANCE IN COMPARISON.

And now what of our neighbors across the line in this respect? They are following exactly the same course, but in a yet more wasteful, reckless and unprofitable manner, if we may except our own New Brunswick operators, who appear determined not to be outdone in their efforts at national suicide.

The Census returns of the United States of 1870, showed a production of sawed lumber alone of 12,755,543,000 feet, and if we add to that enormous amount all the timber made into shingles, all made into hewn, flatted and round timber, used in home consumption and exported, all that is wasted and used for other purposes, (not including firewood and that consumed in clearings) and all the large increase in consumption at the present time, we may estimate the whole amount now at 20,000,000,000 of feet, equal to about 30,000,000 of tons, from which it will be seen *that it would require fifty per cent. more than the shipping of the whole world, which has a tonnage of but* 18,000,000, *to freight that amount from their Pacific States and Territories to the Atlantic sea board*, from whence it must then be carried for distribution at an enormous additional cost, to the points of consumption, even as far west as the States which now furnish their thousands of millions of supply,—and, although that time is within a decade, a less period of time than has elapsed since the close of the strife between the North and the South, which, comparatively speaking, is but as yesterday; and when, besides, some ten millions of consumers will be added to the population calling for supplies, to intensify, if possible, the ruin and distress which will be entailed on the inhabitants and every industrial pursuit of their country, it is only within a year or two their political economists and their Press, with the exception of a few lumber papers in the West, have deemed it worth their while to give a thought to the subject, and that more with reference to its

influence on the rain-fall than to the the question of the extent of the supply to satisfy the future wants of their country.

Having now estimates made by their own timber statisticians of the amount of pine and spruce claimed for their principal sources of supply, it will be seen as we further proceed to investigate the subject that the statements made by me at the Lumberman's Convention, held at Ottawa, some two years ago, on that question, although disputed at the time, are now fully endorsed by themselves. And, beginning with their easternmost State, the State of Maine :— This State, owing to its extensive pine forests, was, not many years ago, designated the " Pine Tree State " of the Union—it is now all but stripped of that product, and the mills erected for its manufacture are now engaged in sawing up the spruce, which they are doing to a large extent, out of logs not more than from six to eight inches in diameter, which they keep slashing down, glutting their own and assisting New Brunswick to overstock the English market as well,—a waste of this valuable description of wood, which it is surprising so shrewd and calculating a people should not see the folly of, and use every means in their power to preserve to maturity.

The following was the product of their mills in 1873, as furnished by Mr. Ira Sturgis of Augusta, the capital of that state, to the writer, in 1874 :

Calais	100,000,000
Machias	75,000,000
Cherryfield	40,000,000
Ellsworth	60,000,000
Penobscott	250,000,000
Kennebec	155,000,000
Androscoggin	75,000,000
Portland	50,000,000
Other scattering mills and timber for home consumption	225,000,000
Making a total of	1,000,000,000

The congressional returns of 1870 for this state give the sawed lumber alone at 639,167,000 feet.

The party who furnished these statistics—one of the largest lumbermen in America, and who professed to be fully posted on the subject of supply, in every section of that state,—felt confident that it would not stand the heavy drain on it for ten years from that date, (two years ago) while there are others who believe that five years would exhaust all fit for exportation, and, from all I have been able to gather on the subject, I think it will be found the latter estimate is the nearest correct. The number of saw mills in that state in 1870 was 1099 against 737 in 1860.

The other Eastern States, comprising New Hampshire, Vermont, Massachusetts, Connecticut, and Rhode Island, with the Middle States of New York, New Jersey, Delaware, Maryland, Pennsylvania, Ohio and Indiana, were, at one time, dense forests, and within a few years most of those lying east of Ohio held large tracts of the finest pine timber. Those states to-day, Pennsylvania excepted, are practically denuded of that wood, and indeed with the exception of the small amount of spruce yet in the Adirondacks, in the State of New York, have little of any description now left. They are sawing up all kinds of rubbish, thinning out the patches left by the farmers for firewood of everything that can be sawed, and are, besides, large purchasers of Michigan pine and Canada pine and spruce lumber, to supplement their comparatively valueless home product, which a very few years will totally exhaust. Any one travelling by rail, which generally takes the uncleared bottom lands on its route, say by the New York and Erie, the New York Central and those through the other states east, will soon be convinced that not the pine and other commercial wood only are exhausted, but the fire wood as well is almost totally gone. New York State, besides what she got from the West, the South, Maine and Canada, sawed up 1,310,000,000 of feet in 1870. The number of saw mills

in that State in 1870 manufacturing lumber was 3,510 against 2,765 in 1860.

And here I would remark that, with respect to the Adirondack territory, it would be better for the State of New York to pay many millions of dollars for the preservation of the forests clothing its mountains, than allow them to be stripped of the timber which acts as a reservoir for their great Hudson River. Once this region is denuded of its trees, that river will in each succeeding spring become a torrent, sweeping all before it, while, for the summer seasons,it will show nothing but a comparatively dry bed till it reaches tide water. But this and the influence of the forests on the rain fall throughout the country, I leave to the scientific elucidation of those who have given their minds to such subjects. My business at present is with regard to the question of the timber supply in its relation to the time of its exhaustion, and its effects on the industries and well-being of the people.

Pennsylvania, which at one time would compare favorably with the best pine-producing states of the Union, as regards both the extent and quality of its pine, is now within a few years of being entirely stripped of that wood. In a recent publication on the subject, we find the following observations and statistics of the supply and consumption of that state.

It says: " Lumber operators and consumers in this state are awakening to a knowledge of the important fact that the pine timber resources of Pennsylvania are not inexhaustible, as they have apparently been long considered. The State was one of the leading pine producers in the Union. The dense forests bordering the Susquehanna and traversed by its many tributaries ; the mountains of the Monongahela Valley, and in fact the tall and majestic trees that covered thickly much of the area of whole counties in the state, were, a few years ago, thought to contain pine enough to amply comply with the law of supply and demand for the present, and to furnish timber for the future, however distant. That impression

the march of events has thoroughly dispelled. The forests of the Delaware have yielded no pine for years, and the resources of the timber regions of Alleghany and Monongahela have been drawn on so largely that, in a comparatively short time, their pine forests will be exhausted. An increasing demand by interior markets, and the inadequacy of the Monongahela and Alleghany counties to respond to it, has awakened much alarm amongst the operators of the Susquehanna Valley, and they are earnestly considering means by which the recklessness of management and waste of timber, so notorious in the past, may be stopped, and the inevitable day, that is, at the best, not distant, when pine lumbering will no longer be one of the great industries of Pennsylvania be postponed as long as possible.

A significant and alarming fact is that the coal regions, once famous pine-producing counties, cannot supply enough to furnish timber for props for the mines."

The article goes on to give the area of the following counties viz.: "Lycoming, Potter, Cameron, Tioga, Elk, Clinton, Centre, and Dearfield, and declares that less than four years will exhaust the supply of the Susquehanna Valley, and the now comparatively neglected hemlock will become the staple of the lumber trade of that section, as it has for years been in the Delaware region."

The State of Pennsylvania, according to the census of 1870, manufactured 1,610,000,000 of feet, about 500,000,000 of which was pine, the remainder, 1,110 millions was hemlock and such as could be gleaned out of the farmers' fire wood patches, as in the State of New York, and this exhaustive process has been going on up to the present time, and a few years more will make a clean sweep of every description in the state. Some idea may be formed of the amount, 1,610,000,000, manufactured and consumed by that state, when it is seen that it is three times as much as we ship from Quebec of both deal and pine timber, if the latter was sawed

into boards. The number of mills then in operation in that state was 3,738 manufacturing lumber against 3,030 in 1860.

West Virginia.—The estimate given of the white pine of this State is of so trifling an amount, 250,000,000, that it is hardly worth mentioning it. It is less than one-tenth of a single year's production in Michigan alone.

To the south of the States already mentioned are Virginia, North and South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Arkansas, Tennessee and Kentucky, having no white pine,—instead of which they have pitch pine and cypress, which, although valuable woods, cannot take the place of white pine for many purposes. We are informed through the columns of the "Georgetown South Carolina Times," by a southern gentleman, who professes to be well posted on the subject, that those States contain a grand total of eleven thousand million five hundred thousand cubic feet," which would be equal to about a hundred and twenty thousand millions of inch measure, and more than all the white pine and spruce this side of the Rocky Mountains in the United States and Canada.—But we are at the same time informed by the same authority, that "the turpentine farmers are destroying it at probably more than ten per cent. per annum." But if we discard altogether this work of destruction, vast as the supply is, it would give but six years stock if it had to fill the gap occasioned by the failure of the other descriptions now used, amounting to 20,000,000,000 a year. It is complained of, besides, that this wood put into buildings decays rapidly where it comes in contact with mortar, and hence the low estimate of value placed upon it in the English market. They too are slaughtering it away with a prodigality equal to that of Maine or Michigan, and not realizing, as they say themselves, the cost of the labor laid out on it.

West and northwest, up to the Rocky Mountains, we have Texas, New Mexico, Arizona, Colorado, Kansas, Nebraska, Dacota, Eastern Montana, Illinois, Iowa, the west half of Missouri,

that part of Minnesota west of the Mississippi, and the southern part of Wisconsin, *all chiefly prairie and an almost treeless territory.* This whole western world, as it might be called, together with Ohio and Indiana, is mainly dependent on the small amount of white pine yet remaining in the States of Michigan, northern Wisconsin and northeastern Minnesota, and I will now proceed to show how much they have still left to supply Ohio and Indiana and those treeless prairie States, the latter of which, having been largely settled by the workmen on the railways which distributed them through the interior as the work progressed, who were too poor to purchase lumber to build barns or houses, beyond hovels to live in, but are now many of them from the fruits of their industry, having good prices for their grain and cattle, in a condition to make all necessary outbuildings, and comfortable dwellings for themselves, and fence their farms, and will yearly be using more and more lumber for such purposes, as they find the means to purchase it.

Michigan, the hitherto El Dorado of lumbermen, and a half a dozen of years ago looked upon and insisted on as inexhaustible, will first be considered, and, commencing with the Saginaw Valley, which has had a widespread reputation, and is spoken of even yet by many who talk at random as possessing vast forests of the finest description of white cork pine, increased its manufacture from 1863 to 1875 as follow:

1863	133,500,000	1870	576,726,606
1864	215,000,000	1871	529,682,878
1865	250,639,340	1872	602,118,980
1866	349,767,884	1873	619,867,021
1867	423,963,190	1874	530,549,595
1868	457,396,225	1875	516,836,830
1869	523,500,830		

Making a total product in thirteen years of 5,769,549,379 feet and reaching its maximum in 1873.

The amount got out the present season in the Valley including

the stream up the Bay is 490,000,000 of feet—the Tittabawasse furnishing 325,000,000 of the whole product, and I have sufficient data to go upon to be assured that the streams furnishing the present supply will at the present rate of consumption be all drained in the next five years. The streams emptying in the Saginaw River from the south are the Cass, the Flint, the Bad, and the Shiawasse, all of which are admitted by those who have investigated the subject to be in the last stages of total exhaustion, and the only river in the Valley now available to any extent for supply is the Tittabawasse, which takes its rise near Houghton Lake and discharges into the Saginaw from the north. This River, the Tittabawasse has been long lumbered on, giving a product, for years, equal to about 350,000,000 of feet annually. The main stream is about exhausted, and the lumbermen are now and have been for some years operating on its tributaries, even to their sources, from which it often takes two seasons to float the logs to the mills, and if we now estimate its standing pine timber at 1,500,000,00 feet it will, I feel confident, more than cover its present area of supply,and, as the whole product of the Valley is usually over 500,000,000 of feet in the season, nearly all of which must be supplied hereafter from that River, it will be seen that five years will exhaust its whole stock, at which time the Saginaw Valley will cease to be a lumber producing section of Michigan, and that without allowing for any increase in consumption during that time.

The next great source of supply is the Muskegon River which takes its rise in Houghton Lake already referred to, and as this great River, the largest in the State, is always pointed to by the lumbermen of Michigan as containing the largest body of timber of any in either peninsula, and will thus serve as a safe guide in estimating the lumber on the other streams, we will give the estimate which has recently been furnished through the *Bay City Gazette* by a party who it appears took unusual pains to obtain the timber statistics of that River, *giving the names of all the principal*

owners with the amount claimed by each, and as it is not at all likely they would under-estimate their stock in trade, it may be taken for granted that the total amount which he aggregates at 1,985,000,000 is, if not greatly in excess of, fully up to the maximum, and he adds : " This is a fair estimate of the standing pine on this stream and its tributaries which will furnish stock for the next five years and after that the pine of the Muskegon is done for the next fifty years and indeed for all time to come,"—and if this estimate is correct, and I don't think it can be well disputed, it tells the tale for the whole of the great pine timber producing peninsula of Michigan. I have it besides on reliable authority that, of the twenty-five mills now running in Muskegon, not more than four will be able to continue operation for over three years from the want of stock.

Grand River.—This River gets supplies from Montcalm county and empties in Lake Michigan at Grand Haven. It has been lumbered on to such an extent that it and all its tributaries, with the exception of that in the county named, may be considered as exhausted, and if we give to the tributary thus excepted a product of 500,000,000 of feet, I think it is fully as much as can possibly be claimed for it, and as the yearly cutting amounts to some 100,000,000 of feet it will, as the Saginaw Valley and the Muskegon, cease to furnish supplies within the next five years.

The next stream of importance on the west side of the peninsula is the Manistee. This River takes its rise near Otsego Lake, which lies north of Houghton Lake. It is about half the size of the Muskegon. It has long been lumbered on, furnishing large supplies for the Chicago market, and if we estimate its standing pine at half of that of Muskegon, say in round numbers 1,000,000,000, it will be as much as it now holds.

The Cheboygan River also takes its rise near Otsego Lake, and empties in the straits of Mackenaw. It is a small stream as com-

pared with the others already considered—has long been lumbered on, and a supply of 500,000,000 would be a large estimate to give it.

The Thunder Bay River which empties in Lake Huron at Alpena, also takes its rise near Otsego Lake, and we will give it the largest amount of standing pine claimed for it by themselves, namely 1,500,000,000 of feet.

The other large river of this peninsula is the Au Sable. It also takes it rise at Otsego Lake, and flows into Lake Huron. It has long furnished large supplies both of timber and lumber for the markets east of it, and 1,500,000,000 will it is thought be an ample stock to give it.

These are all the principal streams of the lower Peninsula of Michigan, and I will here recapitulate the extent of the supplies they may be expected to furnish :—

The Tittabawasse.....	1,500,000,000
Muskegon	2,000,000,000
Grand River.....	500,000,000
Manistee.....	1,000,000,000
Cheboygan.....	500,000,000
Thunder Bay River.....	1,500,000,000
Au Sable.....	1,500,000,000
Add one-third above amounts for the smaller intervening streams.....	2,883,000,000
And one half of the whole for the upper peninsula, or say.....	5,617,000,000
Making.....	17,000,000,000

of feet which at the present rate of consumption of 3,000,000,000 of feet will be totally exhausted in less than six years.

And now let us take another view of the condition of the streams above given. The Tittabawasse and Muskegon rise on and near Houghton Lake. The Manistee, the Cheboygan, the Thunder Bay and the Au Sable have their sources at and near Otsego Lake, and

here around these two Lakes nearly the whole wealth of the timber in the Lower peninsula may be said to be now standing, and on this contracted area the lumbermen's axes are employed so that their ring may be heard from shanty to shanty and across the watershed, showing more satisfactorily than can be determined in any other way how near they have reached the end of their supplies. Beside the facilities afforded by the water courses the following Railways, viz., the Flint and Père Marquette, the Detroit and Bay City, the Jackson, Lansing and Lake Michigan, the Saginaw Valley and St. Louis, the Grand Rapids and Indiana the Muskegon and Big Rapids and the Muskegon and Lake Shore Railways pass through all the pine forests of the state, the most remotely situated from the floating streams; and wherever there is timber there the saw-mill will be found, so that there is scarcely a section of pine in which lumbering is not carried on, and, with the additional facilities thus provided, they are able to light the candle at both ends, and keep slaughtering away, hastening the time of exhaustion and leaving no reserve to fall back on.

The 3000,000,000 of feet yearly manufactured in that state, overstock their own markets east and west, and they are now rejoicing they have found out additional means of sacrificing their remaining scanty stock, by supplanting the Canadian producers in the foreign markets, which of course they will also keep glutted as long as they have a stick left, and, should any other way present itself of affording them the opportunity of yet more rapidly ridding the country of its timber, it may be expected it will also be greedily seized on. They have, however, to live but a few years longer to deplore themselves the ruin they have brought on the industries of the country, and their children after them will long remember with pain their reckless, wasteful and utterly selfish course.

They have already run over their timber territory to such an extent as to reduce the percentage of clear lumber inspected from

16½ per cent. in 1871 to less than 10 per cent. in 1874, and, notwithstanding this, they are contracting with our lumber merchants to furnish deals, giving 95 per cent. of clear which will leave 85 per cent. of common and culls to be disposed of in the home market, or else they have found out some process by which the refuse of their timber which is all they have now left can be converted into clear logs,—and have also found out a way by which to raise a forest of pine trees as easily as a crop of corn. With us here it takes a century to grow a standard pine saw log of 22 inches diameter. The number of mills sawing lumber in that state in 1870 was 1571 against 927 in 1860.

With respect to the amount of supply yet to be drawn from the States of Wisconsin and Minnesota, the Editor of the Northwestern Lumberman gives us, under the head of "Our Future Timber Supply," the following estimate of the standing pine yet tributary to the Rivers of those States:

Names of Rivers.	Feet of Standing Pine.
Escanaba Ford and Cedar	1,209,000,000
Menomonie	3,283,200,000
Peshtigo	829,350,000
Oconto	587,520,000
Pensaukee, Little and Big Suamico	380,100,000
Wolf	898,660,000
Wisconsin	5,529,600,000
Yellow	622,080,000
Menomonie and Chippewa	8,510,760,000
Black	1,416,960,000
St. Croix	6,186,240,000
Upper Mississippi	2,833,920,000
Total	32,278,950,000

With reference now to the above estimate I have already shown that the production of 5,769,579,879 not only all but totally exhausted the following rivers in the Saginaw Valley—namely, the

Saginaw, the Flint, the Cass, the Bad, and the Shiawasse, which were notably heavily timbered streams, but it also required the stripping of the large River the Tittabawasse, and the Au Gres, the Rifle, the Kawkawlin with other streams up the Bay of more than half their pine product to make up the above amount of 5,769,-549,379 feet, and now if any one can believe that either the Wisconsin or the St. Croix, both of which have been lumbered on for over a quarter of a century, yet contains as much standing pine as has been taken off all those Rivers above mentioned—or that the Chippewa, (the Menomonie, mentioned in connection with it is a tributary of it) contains four times as much as the Muskegon, he will I think be prepared to believe anything, however absurd.—*And it would be well for those who may in the future feel inclined to make random estimates of the standing timber of any stream or section of country to remember the product of the Saginaw Valley with that of the streams up the Bay, as it will greatly assist in modifying their extravagant notions of quantities should they be that way inclined.* IT TELLS A TALE THAT CANNOT BE SET ASIDE.

But, giving the whole amount claimed for those States, extravagant as it is, the question is, how long would it last? The present consumption for all purposes drawn from those States is estimated at 2,500,000,000 of feet yearly, which in six years, when Michigan will be exhausted, would amount to 15,000,000,000 of feet, after which they would require to supply in addition the 3,000,000,000 now annually drawn from the latter State, and adding both products together would give yearly 5,500,000,000, which would exhaust the balance of the 32,278,950,000 in a little over three additional years, and that without giving a foot for the supply of the millions of consumers who will be added to the population in that time. So much for the supply of those States on their own figures.

The number of mills in Wisconsin in 1870 was 719, against 476 in 1860, and in Minnesota 207 against 178; and the whole number of mills in the United States exclusively sawing lumber in 1870 was

25,817 against 19,699 in 1860 and in five years from now there will not be one in five in operation.

On the Pacific side there are Washington and Oregon which have timber to spare, and which they are now distributing to the South along the whole Western coast of North and South America. The States of California and Nevada having only about one fifth timber would only give the usual supply reserved by farmers for firewood, and besides providing for their own wants, they have also to supply the neighboring territory of Idaho, Utah and Arizona, which are comparatively treeless. But the Pacific slope, whether in the United States or the Dominion of Canada—no matter what extent of timber territory it contains—will never send a foot of it so far East as long as any is to be found in the North of Europe from which it can be freighted at one-third the cost, and it may be here remarked, to show the absurdity of those who point to the Pacific as one of the future sources of supply, that the cost of ordinary lumber in San Francisco is about as high to-day as the best lumber now in the Albany market.

I have now gone over all the states and territories of the United States, and given the extent of the supply in the timber sections, this side of the Pacific slope, with the consumption going on, *drawing the statistics for the principal regions from their own figures*, and how much does the whole supply amount to in a national point of view, and as contrasted with the ever increasing requirements of the country.

The census of the United States of 1870, referring to the use of wood, reports 63,938 establishments manufacturing articles made entirely from wood, employing 393,387 persons, and using material worth $309,921,403 annually. There are besides 109,512 industries in which wood is an important part; for example, carriages, furniture, bridges, ships, &c., employing 700,915 persons and using material worth $488,530,844. There are, says Professor Sergeant, 72,633 miles of railroad in operation, and the addition of

double tracks and sidings will probably increase this amount to 85,000 miles.

Supposing the life of a sleeper is seven years, the 85,000 miles of track consume, annually, 34,000,000 sleepers, or thirty years growth on 68,000 acres of the best natural wood land, or if the sleeper is artificially raised, some 700,000 acres would be required, planted with trees best adapted to the purpose, regularly cropped and scientifically managed to supply the railroads already constructed. At least 125,000 miles of fencing are required to inclose the railroads of the country, which could not have cost less on an average than 700 dollars per mile. One half of this would barely represent the wood employed or 43,000,000 of dollars while they must take lumber annually to the value of not less than 10,000,000 of dollars to keep them in repair.

By the last returns I have seen (1872), remarks the Professor, there was in operation in the United States 63,000 miles of telegraph, which destroyed in their construction 1,600,000 trees for poles, while the annual repairs must call for 250,000 more.

The 20,000,000,000 matches manufactured in the United States annually require, according to Mr. Marsh, 250,000 cubic feet of the best pine lumber (equal to about 3,000,000 feet inch boards).

At least 1,450,000 cords of wood, principally pine, were required to bake 2,898,382,000 bricks, which the census of 1870 gives of the number made in that year requiring the cutting of the trees from 36,000 acres of land.

The manufacture of shoe pegs (a Massachusetts industry, but now carried beyond the limits of that state for want of material), consumes annually 100,000 cords of white birch, worth 1,000,000 of dollars.

In 1850 the value of the pine packing boxes made in the United States was $1,000,000, in 1870 they were valued at $8,200,000. The value of the material made into wooden ware made in the United States increased from $436,000 in 1850 to $1,600,000 in

1870. The value of the lumber converted into agricultural implements in 1850 was $8,000,000 while in 1870 it had reached the enormous sum of $73,000,000, of which the forest must have furnished $20,000,000.

From the foregoing exhibit of the partial uses of wood and its value can we with the utmost stretch of imagination conceive what would be the consequences to the welfare, happiness and civilization of the community were the supplies for those great industries, with their vast yearly increasing requirements as above indicated, cut off. All the desolation of their war with all the commercial convulsions that ever happened to the country, with their aggregated effects confined to one period, would be as nothing compared to the terribleness of the calamity that will be experienced from a dearth of timber, and although it is now beyond dispute that a single decade will make a clean sweep of every foot of commercial wood in the United States this side of the Pacific slope, we find the lumbermen keep slashing away with all their might to hasten the time of the total destruction of the material which keeps alive those industries, as if it was some noxious thing which it was the chief business of their lives to extirpate and root out of the country as rapidly as possible.

Turning now to the investigation of the question of our own timber supply and consumption, and commencing on the Pacific side, British Columbia has, it is known, a good supply of a description of pine which differs considerably from our white pine, with other commercial wood, but, whether much or little, it is so far away, as I have already remarked, that it would be much cheaper to freight supplies from the north of Europe than from that Province. It may be utilized to some extent when there is a railway to move it to the Saskatchewan Valley. Northeast of the Rocky Mountains there is some timber on the rivers of the wild north land which discharge into the Arctic Ocean, and some spruce timber is also found on some of the streams, reaching the Northwestern shores of

Hudson Bay, but these comparatively insignificant supplies are also too far away to be of any account to us here in the east, and, if facilities are ever made to make them available, they have a territory to furnish, chiefly prairie, large enough it is said to make a dozen of States as large as the State of New York, and what will be the great draw-back to the settlement of this great country, as it will also be to the prairie States of the American Union, will be the want of timber.

Next comes the Province of Manitoba, without any supply of timber except what little may be found on tha Canadian portion of the Red River, around the Lake of the Woods, and other patches of but small account in a country almost all prairie.

Next we come to the rocky, barren district north of Lake Superior and bounding the Province of Ontario on its northwest extremity. This Province, the Province of Ontario, was not long since a magnificent forest country, probably unsurpassed on the face of the Globe in its wealth of timber and especially that of the best description of white pine, in which it abounded. That section drained by the streams which empty into Lakes Huron, St. Clair and Erie was exceedingly rich in the commercial woods of pine, oak, walnut, ash, elm, and white wood. They are now all but gone, hardly any can now be seen west of the Northern Railway, which runs from Toronto to Collingwood on Georgian Bay.

The Muskoka country on Georgian Bay, which was only a few years ago opened up to settlement, is undergoing the same rapid process of denudation incident to all new timber settlements. The hardwood is being burnt up to make way for the plough, and the pine is fast disappearing under the stroke of the axe for the insatiable saw mill. That section, with all the streams emptying in Georgian Bay up to the Sault St. Marie, does not hold as much pine as is got out in a single season in Michigan alone. In fact it would be a wise measure, if it could be enforced, to compel the

whole Province west of the watershed of the Ottawa to preserve the little timber now remaining for its own use.

We now reach the Valley of the Ottawa, which is the only pine timber region we have, worth giving a moment's consideration to, in discussing the question of supply, and yet from the information I have obtained on the subject, from those whose lives have been mostly spent in the territory, I have every reason to conclude that, at the rate of consumption going on, a single decade will be sufficient time to totally exhaust its resources. And as we will be called on to supply the deficiency shortly to arise in the States the time will be correspondingly shortened.

The valley of the St. Lawrence from Montreal to the gulf never had a great amount of pine timber on it. The St. Maurice held more than the whole territory beside, and that River has been undergoing a course of depletion for so many years that I feel safe in saying it would not now afford enough to supply the whole consumption of the State of New York for a single year.

I would now offer a few remarks regarding our spruce timber supply, a very valuable wood which ranks next to that of pine in the amount of consumption, and enters into competition with the lower grades of that product to a very considerable extent. The supply of this timber this side of British Columbia available to us is confined chiefly to the valley of the St. Lawrence below Montreal, the Eastern Townships, Nova Scotia and New Brunswick. The Eastern Townships have been run over to a large extent for both local consumption and foreign demand. Every stream in it has been ransacked for the saw mills in the interior, on the River, and at Quebec, and there is not now much left convenient to the floating streams, and especially in the St. Francis district, outside the lands held in fee by private parties. On the North shore of the St. Lawrence the spruce is exhausted for many miles back, and what remains is all now held under license from the Government of the Province, as is also the whole region below Quebec, hardly

a stream of which but has extensive mills on it, and from all appearance this description of timber will be as short lived in this Province as the white pine.

Nova Scotia is also making rapid progress in ridding her soil of its wood incumbrance, and with regard to New Brunswick, which manufactures more spruce deals than are shipped at Quebec of both pine and spruce, and appears determined to get rid of her timber at any sacrifice, cannot, if the Press of that Province correctly informs us on the subject, have any great supply now left. The St. John Telegraph, the leading paper of the Province, gives us an idea of the state of matters there. It says: "That the increasing scarcity of timber adjacent to the sea and the navigable rivers has within a few years become a subject of great moment to the inhabitants of the Province. Until recently some of our people have been accustomed to look upon our pine and spruce trees as an incumbrance to the land and unworthy the cost of protection. The public, however, think differently now, since they find that *one-half of the best timbered lands have been destroyed, while nine-tenths of the remainder have been worked on so much that they have been largely deprived of their most valuable soft woods.*" and yet we find that in the face of this condition of the timber resources of the Province, after having stripped it of its immense amount of most valuable pine timber, they are slaughtering away at what is left of their spruce, much of it not thicker than one's arm, and throwing it on the English markets at auction to such an extent as not to realize for it more than it should now be worth standing in the forest. And thus, while utterly ruining the trade in all descriptions of wood which competes with them on both sides of the Atlantic, doing incalculable injury to that Province in entailing on its inhabitants one of the direst calamities that could befal them,—a want of timber.

An article in a recent issue of the London Timber Trades Journal mentions a sale of 300 acres of timber, grown by the Earl of Cawdor on the mountains of Scotland, which brought 16,000

pounds, sterling, about 80,000 dollars, and that after it had undergone repeated thinnings which realized large additional sums; and I will venture to say that there are not 300 acres of the timber which the lumbermen of New Brunswick are now recklessly throwing away but what would be worth as much in a few years time if left untouched.

In five years neither pine timber, nor pine or spruce deals, except it may be some of the best clear pine, which is indispensable for many purposes to the people of Britain and for which they will have to pay excessive prices, will be shipped from the Port of Quebec.

In five years lumber will be higher on this side the Atlantic, with the above exception, than it is now or will then be in Great Britain, inasmuch as the latter country will be nearer the sources of supplies in Northern Europe.

In five years I look for lumber to be shipped from the Ottawa to supply Michigan and the Prairie States of the west, *and in a dozen of years from now the commercial woods of the United States and Canada this side of the Pacific Slope will have totally vanished*, and instead of our running abroad to find markets on which to force and sacrifice the products of our forests we will be running abroad to see where we can purchase supplies for our home consumption, and the shipping which is now engaged in carrying away our timber and lumber will be required to freight supplies to us from wherever they can be found.

The question will no doubt be asked if I have any remedy to suggest for this ruinous state of things? I would reply, our Government having wastefully sacrificed the timber of the country by throwing it on the market, by auction and making presents of it to favorites, there is none now left except a few blocks of but little timber value, which this Province took back from the Railway projectors who instead received money consideration as assistance to build their roads, and it is now too late to think of its preservation to any

appreciable extent. One thing, however, Ontario at once and Quebec in two years can do, and that is put a stop to the getting out of square timber in the woods, which not only occasions the loss of one quarter of the most valuable portion of the tree, but the greater destruction arising from cutting down trees to make into timber, but which from some imperfection is found to be unsuited for the purpose and is consequently left to rot in the woods although much of it would be found valuable for saw logs. But there is yet a far greater destruction of the forest by fire, which follows the getting out of square timber.

The square timberman goes into the woods, ransacks them, selecting here and there the best timber, as it brings the most profit, and the scoreblocks and hewings he leaves after him a few warm or dry days turn into kindling wood, which a spark will set ablaze, and this, running along the whole length of the tree, communicates with other waste from other trees and those around which are rejected, until the whole forest is swept by the devouring element, and in this way more timber is destroyed than is marketed. It is very rare to find fire running through a forest where timber is cut down and burnt to prepare the land for the plough, as the above means of conveying and disseminating it are wanting. A stop therefore should be put to the making of square timber for exportation, and the Crown Lands Commissioner who neglects to do so commits a crime for which he should, above everything else pertaining to his office, be held responsible. As respects the question of tree-planting it has often been remarked that "where you cut down one tree you should plant another," but this procedure in the woods would only be a waste of time and labor, as a spark reaching the debris of the trees felled would burn up those planted in their stead, and this would, sooner or later, be their fate. The only suitable place to plant is on cleared farm lands, or on the prairies, but the latter would require to be planted with trees whose roots penetrate deep in the soil, as they would be without shelter from the winds

which sweep over the plains, the force of which would prevent any other description from taking root. It would also be necessary to guard those planted in every stage of their growth from the ravages of the yearly recurring prairie fires which have hitherto kept the country in its treeless state. No provision, however, of the kind indicated, for the supply of our future wants, appears to be yet thought of, and, even if it was at once commenced, the country would be totally stripped of its present stock of timber long before those plantations would be able to afford any appreciable supply of even the softest and most valueless description of wood. And now if, in addition to the course I have pointed out, of saving even to that extent our scanty stock, any information given in this exposition of the supply question, should have the effect of inducing our license holders and lumbermen to husband their resources and not throw them away, as has hitherto been too much the case, I shall feel that my labor in that respect has been of some service to them and the country.

I have now given the only course left us for eking out the time of the total exhaustion of our forest, and when that time is reached —when, instead of our receiving twenty-five millions of dollars annually from our forest, we will be required to send double that amount out of the country for supplies, I will not venture to express an opinion of its effects on our industries but will merely remark that it would be well for every business man to be prepared to, as our neighbors across the line expressively phrase it, "stand from under."

JAMES LITTLE.

Montreal, July 1st, 1876.

NOTE.—White pine in Canada is known in Great Britain as yellow pine.

Since the first edition was published I have had several communications from Michigan and Wisconsin, in which it is stated that I have largely over-estimated the amount of supply in those States; I have not, however, made any alteration in the figures.